Message

From: Perlmutt, Lars [perlmutt.lars@epa.gov]
Sent: 3/21/2018 12:17:56 PM
To: Liljegren, Jennifer [Liljegren.Jennifer@epa.gov]
Subject: RE: Milwaukee Ozone Designation

Thanks, Jenny. I've noted this to our managers as well.

From: Liljegren, Jennifer
Sent: Tuesday, March 20, 2018 5:25 PM
To: Perlmutt, Lars <perlmutt.lars@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Hi Lars,

The modeling was not documented in Wisconsin's April 2017 TSD or February 2018 comment letter TSD.

We have the following questions about the source apportionment modeling:

- What year was it conducted for? 2011 or 2017? Which version of the 2011 inventory was used? What model version was used? Was grid resolution was used?
- Are contributions based on an average of all days or were they calculated only for high days? How was this calculation conducted? Did they use the methodology from the cross-state rule to isolate contribution on high days?

I suspect based on other photochemical modeling protocols and presentations we have seen from LADCO that it was for high days, but the short answer is, we just do not know.

Jenny

From: Perlmutt, Lars
Sent: Tuesday, March 20, 2018 3:33 PM
To: Liljegren, Jennifer <Liljegren.Jennifer@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Thanks so much Jenny. One clarifying question on modeling. Is this on days that exceed the standard or on all days?

- Source apportionment modeling from WDNR/LADCO shows that sources within Wisconsin contribute up to 15% of ozone (~10.5 ppb).

From: Liljegren, Jennifer
Sent: Tuesday, March 20, 2018 12:26 PM
To: Perlmutt, Lars <perlmutt.lars@epa.gov>
Subject: RE: Milwaukee Ozone Designation

I think we could add it to the "Cons" list of Option 3A/B

- Extends **2.9 miles inland in Ozaukee and Milwaukee** counties, but excludes attaining monitors in Milwaukee County, which are located in the portion of the county where high density of precursor emissions originate (Figure 4).

- Contours exclude the majority of the emissions sources in the 5-county area.
  - Contours collectively only capture approximately 4% of VOC, 7% of NOx, and 8% of vehicle miles traveled (VMT)
  - Contours do not capture areas of high population density (Figure 5).

From: Perlmutt, Lars
Sent: Tuesday, March 20, 2018 11:11 AM
To: Liljegren, Jennifer <Liljegren.Jennifer@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Thank you. With regards to figure 4 and 5 in the briefing. Is there a particular section that you wanted these figures referenced?

From: Liljegren, Jennifer
Sent: Tuesday, March 20, 2018 11:39 AM
To: Perlmutt, Lars <perlmutt.lars@epa.gov>
Cc: D'Agostino, Kathleen <dagostino.kathleen@epa.gov>; Aburano, Douglas <aburano.douglas@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Svingen, Eric <Svingen.Eric@epa.gov>; Rosenthal, Steven <rosenthal.steven@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Yes, both bullets are accurate and we are comfortable with it.
15% would be 10.5 ppb if the monitor were at a 70 ppb if you'd like to add that in parenthesis next to the 15%.

Source apportionment modeling from WDNR/LADCO shows that sources within Wisconsin contribute up to 15% of ozone (~10.5 ppb).

Thanks,
Jenny

From: Perlmutt, Lars
Sent: Tuesday, March 20, 2018 10:14 AM
To: Liljegren, Jennifer <Liljegren.Jennifer@epa.gov>
Cc: D'Agostino, Kathleen <dagostino.kathleen@epa.gov>; Aburano, Douglas <aburano.douglas@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Svingen, Eric <Svingen.Eric@epa.gov>; Rosenthal, Steven <rosenthal.steven@epa.gov>
Subject: RE: Milwaukee Ozone Designation

I've added in the emissions data and also added the point about legal risk, too. With regards to source apportionment modeling, on yesterdays' call our management was particularly interested in the 15%, 12%, and 7% contribution to violating monitors from within Wisconsin.

In the two bullet below where you've added emissions data from Doug, it states:

- Source apportionment modeling from WDNR/LADCO shows that Wisconsin sources do contribute.
- 5-factor analysis with HYSPLIT indicates contribution (Figure 1).

I'm trying to add a bit of specificity to these points. Is it accurate to say the following with regards to bullet 1?
Source apportionment modeling from WDNR/LADCO shows that sources within Wisconsin contribute up to 15% of ozone.

Bullet 2:
5-factor analysis, including emissions data and HYSPLIT, indicates contribution, including from areas further inland from the Wisconsin shoreline recommendation.

Joann Rice wanted to confirm that this statement would be accurate for each of the three violating monitors.

If R5 is not comfortable with any of this language, I will not include it.

From: Liljegren, Jennifer
Sent: Tuesday, March 20, 2018 10:03 AM
To: Perlmutt, Lars <perlmutt.lars@epa.gov>
Cc: D'Agostino, Kathleen <dagostino.kathleen@epa.gov>; Aburano, Douglas <aburano.douglas@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Svingen, Eric <Svingen.Eric@epa.gov>; Rosenthal, Steven <rosenthal.steven@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Thanks Lars, we appreciate your strong work as well. I just added one additional bullet point on page 3 summarizing the numbers we got from Doug Solomon and denoted it with a comment bubble, so it would be easy to see where the change was made.

We do not have a bullet point under the option 3 "cons" list that mentions the legal risk of excluding contributing emissions, if you and your team at OAQPS agree that would be worth adding based on our conversation with OGC and everyone yesterday, please feel free to add it.

Jenny

From: Perlmutt, Lars
Sent: Tuesday, March 20, 2018 7:19 AM
To: Liljegren, Jennifer <Liljegren.Jennifer@epa.gov>
Cc: D'Agostino, Kathleen <dagostino.kathleen@epa.gov>; Aburano, Douglas <aburano.douglas@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Svingen, Eric <Svingen.Eric@epa.gov>; Rosenthal, Steven <rosenthal.steven@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Thanks so much, Jenny. I'm happy to add in any items from Doug as you see fit and we certainly appreciate your strong efforts with this difficult scenario.

Kindly,

Lars

From: Liljegren, Jennifer
Sent: Monday, March 19, 2018 6:33 PM
To: Perlmutt, Lars <perlmutt.lars@epa.gov>
Cc: D'Agostino, Kathleen <dagostino.kathleen@epa.gov>; Aburano, Douglas <aburano.douglas@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Svingen, Eric <Svingen.Eric@epa.gov>; Rosenthal, Steven <rosenthal.steven@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Hi Lars,

Attached is the document with Region 5 edits in track changes. We will take a look at Doug Solomon's calculations, which he said would be ready tomorrow morning, and will let you know if we would like to add anything then.

Thanks and have a nice evening,
Jenny

From: Perlmutt, Lars
Sent: Monday, March 19, 2018 2:51 PM

To: Liljegren, Jennifer <Liljegren.Jennifer@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Hi Jenny,

Thanks again for all of your hard work. I'm finally getting to emails and wanted to quickly check-in. Are you and your team making changes directly to the template that I sent for this morning's call (Tier 1 Wisconsin AA briefing 031318)? That would be ideal.

I understand that you're working with Doug Solomon in OAQPS as well to obtain emissions values and that he is working as quickly as possible. Thanks so much again and let me know if there is more information or direction you need from us.

Kindly,

Lars

From: Liljegren, Jennifer
Sent: Monday, March 19, 2018 1:26 PM
To: Mathias, Scott <Mathias.Scott@epa.gov>; Jones, Rhea <Jones.Rhea@epa.gov>; Naess, Liz <Naess.Liz@epa.gov>; Scott, Denise <Scott.Denise@epa.gov>; Oldham, Carla <Oldham.Carla@epa.gov>; Perlmutt, Lars <perlmutt.lars@epa.gov>; Rice, Joann <Rice.Joann@epa.gov>; Tierney, Jan <tierney.jan@epa.gov>; Buchsbaum, Seth <buchsbaum.seth@epa.gov>; Smith, Kristi <Smith.Kristi@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Aburano, Douglas <aburano.douglas@epa.gov>; D'Agostino, Kathleen <dagostino.kathleen@epa.gov>
Subject: RE: Milwaukee Ozone Designation

Thanks, I think it is worth mentioning that in WDNR's February 28, 2018, comment letter, they indicate a "specific modification" with respect to Racine County from what they included in their April 24, 2017, supplemental TSD. Page 22 and page 25. They do not mention anything about unclassifiable for this county in their updated comment letter TSD.

1. Finalize the state's recommendation of attainment in all areas of the state. This would appropriately recognize that the state has very little control over ozone concentrations in its lakeshore region due to out-of-state emissions, geography, and meteorology.

2. Finalize technically supported boundaries that reflect the maximum extent of the 70 ppb ozone design value gradient. This scientifically-sound approach is supported by air quality monitoring data and the science, which clearly identifies a narrow shoreline ozone gradient. The DNR first described the extent of this gradient in its April 2017 submittal and provides that information again here, with several specific modifications to Racine and Sheboygan counties.

The technically-supported alternatives presented below are not state recommendations for nonattainment areas. They are included to describe the maximum extent of potential nonattainment areas for this NAAQS based on the data, scientific principles, and other factors included in DNR's submittals to EPA as well as EPA's own technical documentation. Maps showing these alternative boundaries are shown below for individual areas.

Racine County

Any nonattainment area in Racine County should be consistent with any nonattainment area in Kenosha County and follow the same contour-based approach. Any nonattainment area boundary should extend no greater than 4.2 miles inland from the lakeshore, which is consistent with the 70 ppb ozone design value contour as determined in DNR's April 2017 TSD for Kenosha County. This boundary is shown in Figure 11 and is supported by data and other evidence, as described below.

Racine County is located downwind of Chicago on the Lake Michigan lakeshore and thus is likely to have similar ozone concentration gradients to Kenosha County. Racine County's emission levels are similarly low, accounting for just 1 to 2 percent of the total region's emissions (Table 2). The county's location on the lakeshore and low levels of local emissions suggest that ozone concentrations in Racine County are dominated by the southerly transport of ozone over Lake Michigan.

From: Mathias, Scott
Sent: Monday, March 19, 2018 12:08 PM
To: Jones, Rhea <Jones.Rhea@epa.gov>; Naess, Liz <Naess.Liz@epa.gov>; Scott, Denise <Scott.Denise@epa.gov>; Oldham, Carla <Oldham.Carla@epa.gov>; Perlmutt, Lars <perlmutt.lars@epa.gov>; Rice, Joann <Rice.Joann@epa.gov>; Tierney, Jan <tierney.jan@epa.gov>; Buchsbaum, Seth <buchsbaum.seth@epa.gov>; Smith, Kristi <Smith.Kristi@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Aburano, Douglas <aburano.douglas@epa.gov>; D'Agostino, Kathleen <dagostino.kathleen@epa.gov>
Cc: Liljegren, Jennifer <Liljegren.Jennifer@epa.gov>
Subject: Milwaukee Ozone Designation

I talked to Mike K and here's how he sees the options

1) Agree with state recommend of attainment – no technical or legal basis where violating monitors exist; possible exception is Racine if we determine it is not contributing to violations to any of the three violating monitors further north in Ozaukee/Milwaukee Counties
2) Agree w/state's alternate recommendation of NA for shoreline areas, one for Ozaukee/Milwaukee and one for Racine. Option 2b would be NA for northern shoreline, and Unclassifiable for Racine shoreline (see excerpt below).
3) Stick w/EPA's 120-day full-county area based on our assessment that 15% is not an insignificant contribution from within WI, and our best assessment is that the surrounding counties we identify through HYSPLIT and emissions data (magnitude & location) are the most likely nearby contributors. We don't have anything on the record for any other alternative partial county boundaries to evaluate.

He also pointed me to this excerpt from pages 50-51 of the April 24, 2017 supplemental TSD that does in fact speak to "unclassifiable" for Racine:

Racine County
WDNR ceased operating a long-running ozone monitor in Racine County at the end of 2013 due to safety concerns at the site. In 2015, WDNR began operating a new monitor in the county at the "Payne and Dolan" site. The lack of ozone monitoring data for 2014 makes it impossible to calculate a 2014-2016 design value (see Table 6.2).
Given the lack of 2014 data, it is impossible to predict with certainty whether this monitor would have attained or violated the NAAQS over the 2014-2016 period. EPA states in its designation

guidance that monitors with incomplete data may be designated "unclassifiable." If EPA does not designate Racine County as attainment for the 2015 ozone NAAQS, **EPA should consider an unclassifiable designation in this county.**

Table 6.2. Fourth high maximum daily 8-hour average ozone concentrations for the Racine Payne and Dolan monitor during the 2014-2016 design value period.

Monitor	*Fourth High Maximum Daily 8-Hour Average Concentrations (ppb)*		
	2014	*2015*	*2016*
Racine Payne & Dolan	-	68	76

However, if this monitor was somehow found by EPA to measure values above the 2015 ozone NAAQS in spite of the missing year of data, the location of the 70 ppb design value contour would be closer to the lakeshore than that in neighboring Kenosha County. Almost no ozone-rich air was observed arriving at the old Racine monitor from the south-southwest or southwest (Figure 5.1). [33] This is in contrast to the significant contributions from these directions at the Kenosha County monitors, as discussed previously. This suggests that Racine County is not subject to the same direct transport mechanism as is Kenosha County and thus does not receive elevated ozone concentrations inland from the lakeshore. It follows that the 70 ppb contour would be located closer to the lakeshore in Racine County than the 4.2-mile distance supported for Kenosha County.

[33] Wind direction is not measured at the Racine Payne and Dolan monitor, so the pollution rose shown for Racine uses data from 2010-2013 for the original Racine monitor.

Scott Mathias | Associate Director, Air Quality Policy Division | U.S. EPA, RTP, NC 27711 | 919.541.5310